



The Blurb



*Newsletter of The Phil-Mont Mobile Radio Club
66 Years of Public Service, 1949 to 2015*

Volume 66 Number 2

www.phil-mont.org

February 2015

*The General Membership Meeting in on the 11th at the Willow Grove
Giant Supermarket 2nd Floor*

*President's Day, General Membership Meeting
and ... Yay, Groundhog Day!
C'mon Phil, cut this winter short!*

*Barry's digital series continues on page 5
Watch upcoming Blurbs for enlightening and interesting articles by Bob, W3NE
Doug, WA3DSP and more on THOR by Barry*

Welcome to new Youth Member Griffin E. Timm, KC3CZE
See you on the air Griff!

The February meeting will feature a presentation by Doug, WA3DSP on Allstar VOIP radio linking and control software on the Beagle Bone Black. The presentation will include a live radio demonstration of a low power homebrew repeater controlled by the Allstar code. Bring your UHF handhelds for the demo.

<p><i>The Blurb</i> is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, Inc., whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. <i>Copying and quoting</i> is permitted with a credit line. We gladly exchange publications with other amateur radio clubs.</p> <p>Requests should be sent to the Editor: <i>Rick DeVigiliis ND3B@ARRL.net</i></p> <p><i>Subscriptions</i> are available to non-members for \$12, addressed to the Treasurer.</p> <p><i>Labels and mailing: KB3IV</i></p> <p><i>Submissions deadline:</i> All copy must be in the hands of the Editor by the 20th of the previous month.</p>		<p><i>Directors:</i></p> <p><i>N3QV(15)</i> <i>W3RM(15)</i> <i>K3HWG(15)</i> <i>WA3KIO(16)</i> <i>KB2ERL(16)</i> <i>ND3B(16)</i> <i>W3STW(A)</i></p>		<p>Contact Phil-Mont: P.O. Box 404 Warminster, PA 18974 http://www.phil-mont.org Website: Eric N3QV & Andrew KC2PMW</p> <p>For club information: Contact any club officer, or the repeaters listed below. Address or club directory changes and articles for the membership e-mail list should be sent to: KB3IV</p>			
		<p><i>Sunday Morning Net Schedules</i></p> <ul style="list-style-type: none">• 2 Meter/ 70cm Net..... at 0930L on W3QV repeater• 10-on-10 Net at 1000L 28.393 MHz USB (±QRM)• 75 meter Net at 1020L 3.993 MHz LSB• ARES at 2100L on the W3QV repeater					
<p><i>Committees</i></p> <p>Blurb folding: KB3IV & N3GLU Directory: KB3IV Field Day: KC2PMW Fusion Coord: NC3U</p>		<p>Internet: N3QV & KC2PMW Membership: K3HWG Net Control: KB3IV</p>		<p>Program: W3AOK Publicity: W3RM Refreshments: W3AOK Repeater: W3AOK</p>		<p>Scholarship: W3RM Sunshine: N3GLU VE Program: NS3K Welcome: N3UBY Youth: KC2PMW</p>	
<p><i>All visitors are welcome!</i></p> <p>The club meets at 7:30 PM on the <i>second</i> non-holiday Wednesday each month except July and August at Giant Supermarket, 315 York Rd, Willow Grove, PA Maps and directions are available at www.phil-mont.org.</p>							
<p><i>License Examinations</i> are held on the fourth non-holiday Thursday each month at Community Ambulance Association, 1414 E. Butler Pike, Ambler PA 19002 Registration begins at 7:00 P.M. Applicants should contact Jim McCloskey NS3K at 215-275-2979 or jmccloskey@msn.com for the latest information.</p>							
		<p><i>Club Stations W3QV/R: The Jim Spencer Memorial Repeater System</i> Ridge & Port Royal Avenues, Philadelphia, PA <i>Trustee: W3RM</i> 147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz Reach us on EchoLink through W3QV-R W3AA Trustee: WU3I W3EM: Field Day/special event station Trustee: N3QV</p>					
<p><i>The Officers</i></p> <p><i>President:</i> WA3GM Greg Malone wa3gm@yahoo.com <i>Vice President:</i> W3AOK Bill Popovic w3aok@verizon.net <i>Treas:</i> KB3IV Ed Masarsky kb3iv@comcast.net <i>Secretary:</i> WU3I Steve Hoch steven.hoch@verizon.net</p>							

The Prez Sez ...



Happy New Year Phil-Mont!!!

The elections have come and gone and your new Phil-Mont officers are Board of Directors are in place for 2015.

I would like to say thank you to all for your confidence in electing me as your President for the coming year as well as the rest of the team. Although no one ran against the current officers we will take that as a sign that you were confident in the fact that we would serve the club in the best interest of Phil-Mont which of course we will indeed do.

The Annual Phil-Mont Auction was held on January 8 and was well attended. It was nice to see some old faces that we have not seen in a while as well as some new ones which I hope we will continue to see in the months ahead. The auction was fun and a success as the treasurer will report later. I would like to thank the following members, "Auction Team", for the GREAT JOB they did to make the evening a success. Our Auctioneer Ed, KB3IV did a great job behind the mic and keeping the evening moving and entertaining as well as Steve WU3I, Bob KB2ERL and Phil-Monts own version of Vanna White, Jack WA3BXH, for keeping all the paperwork and finances straight.

As President I have the responsibility to appoint a Board Member and in keeping with Phil-Mont tradition I have asked our 2014 President Al

W3STW to fill that position on the board and he has graciously accepted. Thank you Al and we will all benefit from your knowledge and wisdom.

I have also appointed Bill K3HWG as our new membership chairman as Keiko KB3SJT has stepped down as of the end of 2014. Thank you Keiko for a GREAT JOB!!

As we are now FUSION enabled with two fusion repeaters the board felt the need for someone in the digital world to keep us up to date in the fusion world so I have appointed, with the approval of the BOD, Sal NC3U to be our Fusion leader and he has graciously accepted. Thank you Sal I know you will do a good job.

Our repeater committee reports that the VHF & UHF repeaters have been repaired and are working perfectly. The controller was also modified and we now have echo link interfaced directly. You no longer have to wait for the carrier to drop before you can respond. Thank you Bill W3AOK, Steve WU3I and the rest of the repeater committee for all your hard work during this transition.

Our program for February will be presented by our own Doug Crompton WA3DSP on the All Star Network featuring the Beagle Bones Black. Please come out and enjoy this most interesting presentation. If anyone has any suggestions for a speaker or would like to speak at one of our meetings please let any of the club officers or board members know. Your input is vital and we welcome all suggestions.

Don't forget Field Day and other events are just around the corner.

73, Greg WA3GM

Phil-Mont Birthdays & Tidbytes

February Birthdays

- 03 Barry Feierman K3EUI
James Weiler AB3OM
- 05 Michael Concordia WB3KAC
- 10 Sharon Masarsky N3GLU
- 17 Samuel Smith K3GBA
James Fisher KC3BRA
- 23 Stephen Victor WA2DTW
- 24 Larry Pollack N3VLC
Carmen Decicco KE3QB

MEMBERSHIP STATS

At press time P.M.R.C. had:

- 90 Full paid members
- 8 Family members
- 1 Youth member
- 1 Honorary member
- 1 Pending member



***The VE test session is Thursday evening
the 26th this month.***

As always, many thanks to our VE team!

From the Secretary

General Meeting/Auction 1/8/2015

Meeting opened by President WA3GM at 7:15PM and immediately handed over to Auctioneer KB3IV and his assistants WA3BXH, KB2ERL and WU3I. Auction earned \$247.70 for Phil-Mont. Meeting closed at 9:45PM.

Board Meeting 1/14/2015

Attending were WA3GM, W3AOK, KB3IV, N3QV, WU3I, K3HWG, KB2ERL, WA3DSP, NC3U, and W3STW.

Treasurer Reported:

Dues are coming in and donations to scholarship fund as well. There are still a number of members who have not submitted their dues.

More information on the Scholarship program will be forthcoming from Treasurer after contact with W3RM

Treasurer will reserve site for Field Day.

WA3GM appointed W3STW to the Board of Directors for 2015

Repeater/Tech committee reported the repeater is back in Full service with the exception of the Digital Service on UHF. The DR-1X was returned to Yaesu for Repair with no output. This has been a problem for Yaesu but we expect to have it back ASAP. Work is under way for the installation of a more modern controller giving Control ops more flexibility in controlling the Repeater. The 147.165 repeater is on Digital Full Time.

New Member Application Griffin Timm KC3CZE, a Student at Abington High School.

WA3GM appointed K3HWG as Membership Chairman

An Inquiry is being made into the cost of insurance coverage for the repeater equipment by KB3IV. More to Follow.

KB2ERL Made mention about reinstituting the Awards Program. More discussion to Follow.

WA3GM proposed NC3U as Fusion Repeater Coordinator, Motion Made by KB3IV, Seconded by WU3I, vote Unanimous.

WA3DSP spoke on the Archive Digitization Project he has taken on and its progress.

W3STW made a Motion to close the meeting at 9:45 PM Seconded by K3hwg. A rush to the exit was underway.

Respectfully submitted, Steve, WU3I

Digital Educational Net - Olivia

In the past few articles for the PMRC Blurb I have discussed how computers, sound cards, a SSB or FM radio, and the proper software can be used to communicate via various digital “modes.” All of these modes involve a process of **modulation**; that is, altering the radio frequency’s amplitude, frequency or phase with some kind of signal (audio). A simple RF “carrier,” unmodulated, contains no information and has a zero bandwidth. This used to be called an A0 emission.

CW, as discussed earlier, is a form of “**amplitude shift keying**” (ASK) whereby the 0’s and 1’s of the Morse code are sent as a signal (transmitter ON) or as silence (transmitter OFF). CW, whether sent by hand key, keyer, or keyboard, generates sidebands in the process of turning the RF carrier ON/OFF which gives the CW mode a bandwidth of about 100 Hz at a keying speed of about 25 wpm. However, in the presence of noise, especially on the HF bands, it is difficult to distinguish the 0’s in Morse code (silence) in the presence of atmospheric noise. Hence, **radio teletype** (RTTY) was developed, shifting the frequency (FSK) of the radio wave rather than shifting amplitude to represent the 0’s and 1’s of the digital RTTY Baudot code. However, even shifting of two RF signals in frequency runs into problems in a noisy HF

environment, especially when the signal to noise (S/N) ratio drops below a threshold.

BPSK, or binary phase shifted keying, solves some of RTTY’s problems by encoding the 0’s and 1’s of the BPSK modulation into **PHASE** changes, rather than **FREQUENCY** changes in the structure of the signal. BPSK31, perhaps the most successful of the BPSK family of signals, occupies a very small bandwidth (about 60 Hz) and has a typing speed of about 50 wpm, making it ideal for HF casual QSO’s. Anyone with a sound card and free software like FLDIGI or Ham Radio Deluxe, can enjoy communicating by keyboard using PSK31 with just a few watts of power and a simple HF antenna. However, BPSK suffers from phase distortions on the HF bands. Some wavelengths of HF radio waves bend back to Earth by differential refraction from various heights or layers in the ionosphere, 50 – 200 miles above the Earth’s surface. **Refraction** of waves, bending them back to Earth’s surface, is not like the sharp reflection of light in a plane mirror. The radio wave refraction process occurs gradually over a few miles of the ionosphere, resulting in time or phase changes in the waves when they return to Earth. We used to hear this all of the time on 40 meters daytime AM signals, and it even had a name: “**phase distortion**” as the upper and lower sideband audio of an AM double-sideband signal arrived in the demodulator of the receiving radio at different times, resulting in a funny sounding kind of distortion... like talking with marbles in your mouth. On SSB radios, with only one sideband (upper or lower) carrying the modulation, we never hear this type of distortion. Then along came a mode called Olivia. Olivia (named after the author’s daughter) is an amazing mode in the sense that it can work well under very lousy HF signal conditions, where the signal we want is 10 dB fainter than the average noise level (S/N = -10 dB). This means we can get communication to greater distances with low power and simple antennas and dig out the faint signals from the ever present noise. Olivia also has built in to the code something called “**forward error correction**” (FEC) which is a kind of extra signal to let the receiving station and the sending station check if the copied text is truly what was sent. It is

not like Packet, PACTOR or AMTOR, which are “handshaking” modes in which data are sent in blocks, each with a “check sum.” The receiving station then sends a YES or NO to the transmitting station in a back and forth “got it, or missed it”. If data are missed, the data are repeated in the next block until reception is 100%. FEC does not involve any “handshaking” but rather, is a way of saying to all stations listening “here comes 122 letters ... see if you receive 122 letters”. If so, then there is a good chance you got the correct 122 letters. FEC is not foolproof, but it is better than no error checking, and hence has made its way into many of the HF digital modes like Olivia and THOR.

Olivia is a FREQUENCY modulation structure (**F1B**) much like the original RTTY (two tones) or MFSK (4, 8, or 16 multiple tones). Olivia is also a “family” of modes which can use 4, 8, 16, 32, or 64 independent tones to transmit the characters over bandwidths ranging from 250 Hz to 2000 Hz.

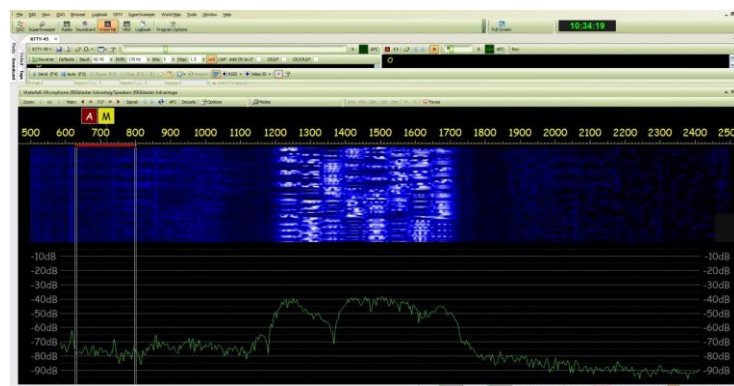
Olivia 8/500 is a popular HF 8-tone signal, occupying about 500 Hz of bandwidth, hence its title tells you much about the signal. Olivia 8/500 seems to be the mode of choice for the PA, NJ, and NY NBEMS digital nets occurring now on the 40 meter band around 7073 kHz (upper side band). Tune into these nets at 9:30 am (NJ) and 11:00 am (PA) every Sunday. Remember to use upper-sideband mode on your radio, in spite of the signal being on 40 meters where LSB voice is more common.

Olivia 8/500 is a fairly slow mode (30 wpm) with a baud rate of 63 (63 changes per second to the signal). But it is a very robust mode, capable of nearly perfect copy even when you don't hear the tones in your speaker or see the tones on your waterfall.

Following is a listing of some of the more common Olivia modes heard on HF bands:

Olivia	Baud	WPM	Duty Cycle	BW (Hz)	Modulation	Emission type
OLIVIA-4-250	63	20	100.00 %	250	4-FSK	250HF1B
OLIVIA-8-250	31	15	100.00 %	250	8-FSK	250HF1B
OLIVIA-4-500	125	40	100.00 %	500	4-FSK	500HF1B
OLIVIA-8-500	63	30	100.00 %	500	8-FSK	500HF1B
OLIVIA-16-500	31	20	100.00 %	500	16-FSK	500HF1B
OLIVIA-8-1000	125	58	100.00 %	1000	8-FSK	1K00F1B
OLIVIA-16-1000	63	40	100.00 %	1000	16-FSK	1K00F1B
OLIVIA-32-1000	31	24	100.00 %	1000	32-FSK	1K00F1B

Here is a screen shot taken of Ham Radio Deluxe (DM780) while I was sending a CQ on the 40 meter band. Note the 8 separate Olivia tones on the waterfall, with a center frequency of about 1500 Hz for the entire signal.



In the next article in this series for the Blurb I will discuss a novel mode called THOR. W3STW and I are now experimenting with THOR 22 on the PMRC Digital Education Net, so if you want to hear this on the two meter repeater, please join us every Tuesday evening at 7 pm on 147.030 (PL 91.5). We welcome all. To receive this mode and

get characters on your computer monitor, all you need is a shielded two-conductor or three-conductor cable connecting your speaker OUT or headphone OUT of your radio to the MIC IN or LINE IN on your laptop. Load and run FLDIGI and you are on your way to enjoying digital keyboard modes.

Barry Feierman K3EUI

DIRECTORY UPDATE

Your 2015 Dues Invoice/Directory Information Sheet was sent to you in a separate mailing.

Please verify the information and return it with your dues & optional P.M.R.C.

SCHOLARSHIP FUND DONATION to: PMRC
PO Box 404 Warminster, Pa 18974. Your early reply will save the club additional expenses and will speed-up the publishing of the 2015 P.M.R.C. Directory.

PMRC Archives Digitization

de Doug WA3DSP

As you are probably aware I have been pushing for digitization of the Philmont archives for the last year. At first I gave up hope that the Blurbs could be found but after advertising in the Blurb I received an email from Maggie. She had almost the entire collection in binders. They have been transferred to me and I have digitized them all including photos and important historical PMRC documents. I would say at this point about 90% of the printed data has been digitized and totals over 2GB's in size. The entire PMRC archives will fit on one DVD. Unfortunately one Blurb binder is missing for the years 1971-1976. It is a blue three ring binder. If anyone has this or might know where it is please contact Doug, WA3DSP.

Thanks for undertaking this project Doug!

February at Phil-Mont

- 1 K3XS
- 2 Groundhog Day
- 8 W3MHP
- 11 General Meeting
- 15 KB3IV
- 16 President's Day
- 22 KB3SJS
- 26 VE session

***Note the New net -
9:00PM Tuesday night on
29.493MHz AM mode***

***Don't forget the ARES net on Sunday nights and
the Digital net on Tuesday nights.***

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For Sale

***1/8" (290#) & 3/16" (380#) Dark Olive
Drab Braided Cord · 100%
Polyester/Dacron Knit Braided. Nice stuff!
Tough and long lasting · UV Resistant and
Low Stretch Proudly Made in the U.S.A.!
Contact Steve WU3I at wu3i@arrl.net or
215-605-6074***

First Class Mail

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